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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XA408

Small Takes of Marine Mammals Incidental to Specified Activities; Cape Wind's High Resolution Survey in Nantucket Sound, MA

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA), notification is hereby given that NMFS has issued an Incidental Harassment Authorization (IHA) to Cape Wind Associates (CWA) to take marine mammals, by harassment, incidental to pre-construction high resolution survey activities in Nantucket Sound.

DATES: Effective January 1, 2012, through December 31, 2012.

ADDRESSES: A copy of the IHA and application are available by writing to Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910.

An electronic copy of the application containing a list of references used in this document may be obtained by writing to the above address, telephoning the contact listed here (see FOR FURTHER INFORMATION CONTACT), or visiting the internet at:

<http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>. NMFS prepared its own Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), which are

available at the same internet address. Documents cited in this notice may be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Michelle Magliocca, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 et seq.) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specific geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS to

review an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as:

any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Summary of Request

On April 26, 2011, NMFS received an application from CWA requesting an IHA for the take, by Level B harassment, of small numbers of minke whales, Atlantic white-sided dolphins, harbor porpoises, gray seals, and harbor seals, incidental to conducting a high resolution geophysical survey in Nantucket Sound. Upon receipt of additional information, NMFS determined the application adequate and complete on August 5, 2011.

CWA plans to conduct a high resolution geophysical survey in Nantucket Sound, Massachusetts over a 5-month period. The survey would satisfy the mitigation and monitoring requirements for "cultural resources and geology" in the environmental stipulations of the Bureau of Ocean Energy Management, Regulation, and Enforcement's (BOEMRE) lease. The survey is required prior to the future installation of 130 wind turbine generators as part of a long-term Cape Wind energy project.

Acoustic stimuli (i.e., increased underwater sound) generated during operation of the shallow-penetration and medium-penetration subbottom profilers may have the potential to cause short-term behavioral disturbance for marine mammals in the survey area. This is the principal

means of marine mammal taking associated with these activities and CWA has requested an authorization to take five species of marine mammals by Level B harassment. Take is not expected to result from the geotechnical portion of the survey or from other survey equipment. Also, NMFS does not expect take to result from collision with survey vessels because they will be moving at relatively slow speeds (3 knots) during seismic acquisition and there is not a high density of marine mammals within Nantucket Sound. It is likely that any marine mammal in the vicinity would be able to avoid the vessel.

Description of the Specified Activity

CWA's high resolution geophysical survey is scheduled to commence in January, 2012 and continue during daylight hours for 137 days. Some deviation from this timeline is possible, depending on logistics and weather conditions. NMFS is issuing an authorization that extends from January 1, 2012, to December 31, 2012.

Within this time period, CWA will collect data along predetermined track lines using a towed array of instrumentation to identify any submerged cultural resources that may be present and to further describe the geological environment within the survey area. Survey vessels are expected to depart from Falmouth Harbor, Massachusetts and will complete an estimated 17 Nautical miles (Nm) of track lines each day. In total, the survey is expected to cover 110 square kilometers (km²) (42.5 square miles [mi²]). This area includes the future location of the wind turbine generators – an area about 8.4 km (5.2 mi) from Point Gammon, 17.7 km (11 mi) from Nantucket Island, and 8.9 km (5.5 mi) from Martha's Vineyard – and cables connecting the wind park to the mainland. The total track line distance covered during the survey is estimated to be about 4,292 km (2,317 NM).

NMFS expects that acoustic stimuli resulting from the operation of the shallow-penetration and medium-penetration subbottom profilers have the potential to harass marine mammals. NMFS expects these disturbances to be temporary and result in short-term behavioral modifications and/or low-level physiological effects (Level B harassment only) of small numbers of certain species of marine mammals. The serious injury or mortality of marine mammals is not expected to occur, nor authorized, incidental to survey activities.

NMFS further outlined the purpose and details of the survey in a previous notice for the proposed IHA (76 FR 56735, September 14, 2011). The activities to be conducted have not changed between the IHA notice and this final notice announcing the issuance of the IHA. For a more detailed description of the authorized action, including vessel and acoustic source specifications, the reader should refer to the proposed IHA notice (76 FR 56735, September 14, 2011), the application, and associated documents referenced above this section.

Comments and Responses

A proposed authorization and request for public comments was published in the Federal Register on September 14, 2011 (76 FR 56735). During the 30-day public comment period, NMFS received more than 80 comments from the general public, in addition to comments from the Marine Mammal Commission (Commission), the Alliance to Protect Nantucket Sound (Alliance; in conjunction with the Public Employees for Environmental Responsibility, Lower Laguna Madre Foundation, Cetacean Society International, Pegasus Foundation, Oceans Public Trust Initiative, and a private citizen), the Humane Society of the United States (HSUS), the Tribal Historic Preservation Department of the Wampanoag Tribe of Gay Head (Aquinnah) (WTGH(A)), the Oceans Public Trust Initiative (OPTI), and a joint letter from the Gloucester Fishermen's Wives Association, Hyannis Yacht Club, Institute for Fisheries Resources, Oceans

Public Trust Initiative, A Project of Earth Island Institute's International Marine Mammal Project, Pegasus Foundation, Save Our Sound/Alliance to Protect Nantucket Sound, and Three Bays Preservation (Gloucester Fishermen's Wives Association, et al.). Numerous members of the public commented on their general opposition toward the long-term Cape Wind energy project. All comments have been compiled and posted at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>. Some comments were specific to the application, but do not have a bearing on NMFS' determinations for issuing an IHA. For example, the Alliance pointed out an inaccurate statement within a footnote of the application. Those comments have been passed on to CWA for consideration in future IHA applications. Any application-specific comments that address the statutory and regulatory requirements or findings NMFS must make to issue an IHA are addressed in this section of the Federal Register notice.

Comment 1: The Commission requested further justification for the use of 17 log R to calculate harassment zones for both shallow- and medium-penetration sub-bottom profilers and the Alliance believes that the 17 log R spreading rate should be validated.

Response: The use of 17 log R (loss of about 5.1 dB per doubling of distance) represents a middle-ground between spherical spreading (loss of 6 dB per doubling of distance) and practical spreading (loss of 4.5 dB per doubling of distance). While NMFS often uses 15 log R as an easy intermediate (between 10 log R and 20 log R), it is simply an estimate. Underwater sound source data collected at the Utgrunden Wind Park (a location with similar water depths to Nantucket Sound) shows a decrease in sound with distance that fits the attenuation curve for spherical spreading (20 log R). Based on this dataset from an area with water depths similar to Nantucket Sound, the use of 17 log R is considered a conservative estimate.

However, based on the Alliance's recommendation, CWA has agreed to conduct hydroacoustic monitoring during the initial deployment of the survey equipment in order to verify the estimated 160 and 180 dB isopleths.

Comment 2: The Commission requested that NMFS require CWA to recalculate the buffer zone for the shallow-penetration sub-bottom profiler based on the 120-dB threshold and, if two or more survey vessels are used simultaneously, account for overlap of the ensonified areas in the calculation of the revised buffer zones.

Response: Recalculating the buffer zone for the shallow-penetration sub-bottom profiler based on a 120-dB threshold is not consistent with NMFS' acoustic threshold criteria, or with previously authorized activities. The shallow-penetration sub-bottom profiler ("chirper") is a non-impulsive, but intermittent (as opposed to continuous), sound source. Continuous sound sources are best represented by vibratory pile driving or drilling and produce sounds that are quite different sound sources compared to sub-bottom profilers. NMFS has previously applied the 160-dB threshold to non-tactical sonar sources used in conjunction with seismic surveys. The pseudo-random noise stimulus and tactical sonar-like signals that were used in the SOCAL-10 behavioral response study are also considered non-impulsive intermittent sources and were authorized by NMFS using the 160-dB threshold. NMFS believes that the 160-dB threshold is appropriately applied to the shallow-penetration sub-bottom profiler and there is no need for CWA to recalculate their buffer zone.

If CWA uses two or more vessels to conduct survey activities, the vessels will work at least 15 miles apart. Therefore, there will be no overlap of sounds generated by the vessels.

Comment 3: The Commission requested that NMFS require CWA to specify the zone of exposure used to estimate the number of takes for each species and ensure that the zone is used consistently for all species.

Response: CWA calculated the zone of exposure as a function of the distance a survey vessel with a deployed boomer would travel in one survey day and the area around the boomer where sound levels would reach or exceed 160 dB. Essentially, the zone of exposure is equivalent to the 160-dB isopleth for the boomer: 444 m (1,457 ft). This distance was applied consistently to all marine mammal species.

Comment 4: The Commission requested that CWA re-estimate the number of takes for each species to address the following: (1) the revised harassment zone for the shallow-penetration sub-bottom profiler; (2) the possibility that buffer zones from two or more vessels would overlap; and (3) the recalculation of density estimates based on haul out counts.

Response: (1) As explained in NMFS' response to Comment 2, there is no reason to recalculate the harassment zone for the shallow-penetration sub-bottom profiler. (2) Also explained in NMFS' response to Comment 2, buffer zones from two or more vessels would not overlap. Therefore, the use of two or more vessels would not affect take estimates. (3) Density estimates for seals based on haul out counts were not used due to the distance of haul outs from the activity area (12.7 miles to Monomoy Island and 7.4 miles to Muskeget Island). Grey seals and harbor seals congregating in these locations are not expected to hear sounds from the survey equipment at 160 dB or higher. The seals most likely to be exposed to potentially disturbing sounds are the individuals swimming and/or foraging within 444 m of the activated medium-penetration subbottom profiler. CWA calculated seal density estimates based on aerial survey counts for seals observed swimming and/or foraging in open water within the activity area.

CWA included an adjustment factor in these density calculations for seals not seen, but considered present during aerial surveys. Seal density estimates were not based on seal haul out counts because it is highly improbable that all seals (i.e., those seen swimming and/or foraging, as well as those found at the haul out sites) would be in the activity area simultaneously. Using the haul out counts to estimate take would misrepresent the number of seals potentially exposed to sounds at or above 160 dB.

Comment 5: The Commission requested that NMFS require CWA to monitor the presence and behavior of marine mammals during all proposed geophysical and geotechnical survey activities (i.e., operation of sub-bottom profilers, drilling, and vibracore sampling).

Response: As stated in the proposed IHA Federal Register notice (76 FR 56735), CWA must designate at least one biologically-trained on-site protected species observer (PSO), approved in advance by NMFS to monitor the area for marine mammals 60 minutes before, during, and 60 minutes after all geophysical survey activities. The PSO will call for shut down if any marine mammal is observed within or approaching the designated 500-m exclusion zone, a distance that exceeds even the Level B harassment zone. Additional PSOs will be used to monitor marine mammal presence and behavior twice a week from the survey vessel and once a month from an additional vessel. NMFS believes that geotechnical survey activities are not likely to result in the take of marine mammals. Underwater sound levels from drill rigs are estimated to be within 118 and 145 dB at the source and the maximum estimated sound level of 145 dB during drilling activities is expected to decrease to 101.5 dB by 150 m. Additionally, monitoring during geotechnical activities is not financially practicable for the applicant.

Comment 6: The Commission requested that NMFS require PSOs to gather the necessary data and work with CWA and other applicants to assess the effectiveness of soft-starts as a mitigation measure.

Response: The IHA requires that PSOs make observations for 60 minutes prior to commencing surveys (including soft-starts), during surveys, and for 60 minutes after surveys end. PSOs will record the following information when a marine mammal is sighted:

(i). Dates, times, locations, heading, speed, weather, sea conditions (including Beaufort sea state and wind force), and associated activities during all survey operations and marine mammal sightings;

(ii). Species, number, location, distance from the vessel, and behavior of any marine mammals, as well as associated survey activity (number of shut-downs or delays), observed throughout all monitoring activities;

(iii). An estimate of the number (by species) of marine mammals that: (A) are known to have been exposed to the survey activity (based on visual observation) at received levels greater than or equal to 160 dB re 1 μ Pa (rms) and/or 180 dB re 1 μ Pa (rms) for cetaceans and 190 dB re 1 μ Pa (rms) for pinnipeds with a discussion of any specific behaviors those individuals exhibited; and

(iv). A description of the implementation and effectiveness of the mitigation measures of the Incidental Harassment Authorization.

Comment 7: The Commission requested that NMFS require CWA to cease all operations when the exclusion zone is obscured by fog or poor lighting conditions.

Response: NMFS included language regarding poor visibility in the Monitoring section of this notice as well as the IHA. This concern is also addressed in CWA's lease, which states

that “seismic surveys shall not commence at night time or when the exclusion zone cannot be effectively monitored.” The lease further states that during monitoring of the 500-m exclusion zone, “the zone may not be obscured by fog or poor lighting conditions.”

Comment 8: The Commission requested additional justification for NMFS’ preliminary determination that the proposed monitoring program will be sufficient to detect, with a high level of confidence, all marine mammals within or entering the identified exclusion and buffer zones.

Response: NMFS believes that the planned monitoring program will be sufficient to detect (using visual monitoring), with reasonable certainty, marine mammals within or entering the identified exclusion zone (500 m). This monitoring, along with the required mitigation measures, will result in the least practicable adverse impact on the affected species or stocks and will result in a negligible impact on the affected species or stocks of marine mammals. Also, NMFS expects some animals to avoid areas around the airgun array ensounded at the level of the exclusion zone. The final monitoring and mitigation measures are considered the most effective and feasible measures and public comment has not revealed any additional monitoring or mitigation measures that could be reasonably implemented to increase the effectiveness of detection.

Comment 9: The Commission requested that NMFS condition the IHA to require CWA to (1) report immediately all injured or dead marine mammals to NMFS and the local stranding network and (2) suspend the construction activities if a marine mammal is seriously injured or killed and the injury or death could have been caused by those activities (e.g., a fresh carcass) – if supplemental measures are not likely to reduce the risk of additional serious injuries or deaths to a very low level, NMFS should require CWA to obtain the necessary authorization for such takings under section 101(a)(5)(A) of the MMPA before resuming its survey activities.

Response: NMFS included language in the Reporting section of this notice and in the IHA that requires CWA to: (1) suspend activities and immediately report incidents to NMFS and the local stranding network if survey activities cause the unauthorized take of a marine mammal; (2) immediately report incidents to NMFS and the local stranding network if CWA discovers an injured or dead marine mammal, and the lead PSO determines that the cause of injury or death is unknown and relatively recent; and (3) report to NMFS and the local stranding network, within 24 hours, incidents of injured or dead marine mammals not associated with or related to survey activities. If survey activities result in the serious injury or death of a marine mammal and supplemental measures are not likely to reduce the risk of additional serious injuries or deaths to a very low level, CWA will not be authorized to take marine mammals incidental to these activities unless they obtain the necessary authorization for such takings under section 101(a)(5)(A) of the MMPA.

Comment 10: The Alliance, HSUS, WTGH(A), Gloucester Fishermen's Wives Association et al., OPTI, and numerous individuals, suggested that NMFS cannot issue an IHA for the proposed activity because CWA is attempting to segment their larger wind energy project and avoid the issuance of a Letter of Authorization (LOA) and associated regulations.

Response: CWA requested an IHA for a discrete, specified activity, the conduct of a high resolution geophysical survey that is required prior to construction of CWA's long-term energy project. The MMPA directs NMFS to allow, upon request, the incidental taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity within a specified geographical region if certain findings are made. All statutory requirements have been met in this instance. The issuance of regulations and an LOA is only required if the proposed activity has the potential to result in incidental takings of marine mammals by serious injury or

mortality. Applicants have the option of applying for a 1-year IHA if their specified activity (in this case, the high resolution geophysical survey) would not result in the serious injury or mortality of marine mammals. Based on factors addressed in the application and proposed IHA (e.g., estimated sound propagation, slow vessel speeds, and monitoring and mitigation measures,) CWA does not anticipate, nor is NMFS authorizing, the incidental taking of marine mammals by serious injury or mortality. Therefore, an IHA is appropriate. NMFS has notified CWA that future activities may also require separate authorization(s) under the MMPA.

Comment 11: The Alliance, OPTI, and numerous individuals, also suggested that NMFS cannot make a final determination on the CWA's IHA application until an EA is released for public comment.

Response: In accordance with NEPA, NMFS prepared an EA to analyze the environmental effects of authorizing Level B incidental take of marine mammals during CWA's high resolution geophysical survey in Nantucket Sound. We note that neither NEPA nor the Council on Environmental Quality regulations require the circulation of a draft EA for public comment prior to taking final agency action. Instead, NMFS makes every effort, based on the totality of the circumstances, to provide the public with sufficient environmental information to permit the public to weigh in with their views and inform the final decision. During the development of this action, including the EA, several documents were available to the public, all of which provided a detailed description of the action and potential environmental impacts. For example, the analysis of impacts to marine mammals from the proposed high resolution geophysical survey activities was contained in NMFS' proposed issuance of an IHA dated September 1, 2011 (76 FR 56735) and is similar to what is contained in the EA. Additional environmental information is contained in CWA's IHA application, which was also made

available to the public on September 14th. Other documents used to inform the EA included the Biological Opinion (issued December 30, 2010 by NMFS Northeast Regional Office, and available at

<http://www.epa.gov/region1/communities/pdf/CapeWind/CapeWindBiologicalOpinion-12-30-10.pdf>) and the Final Environmental Impact Statement (published by BOEMRE on January 21, 2009 [74 FR 3635]) for the long-term Cape Wind energy project. The EA describes potential environmental impacts from the limited action for which an IHA was requested – the take of marine mammals incidental to CWA’s high resolution geophysical survey – which is similar to numerous other survey activities that NMFS has analyzed in the past. NMFS believes that sufficient environmental information was presented to the public and comments on the proposed IHA were taken into consideration during preparation of the EA. In this instance, the project schedule and statutory deadlines contained in the MMPA made it impracticable to provide a separate public review and comment period for the EA itself.

Comment 12: The Alliance pointed out that NMFS did not propose a sound level limit for sound sources that are not expected to result in the harassment of marine mammals (i.e., single-beam echo sounder, multi-beam echo sounder, and side-scan sonar).

Response: CWA indicated that the actual sound sources to be used during survey activities will be comparable to those listed in the application. Sounds from the single-beam echo sounder, multi-beam echo sounder, and side-scan sonar are not expected to reach levels that would result in the harassment of marine mammals.

Comment 13: The Alliance believes that NMFS underestimates the possibility of a survey vessel striking a marine mammal while transiting to and from port at speeds up to 15 knots.

Response: NMFS believes that the likelihood of a survey vessel striking a marine mammal is low considering the low marine mammal densities within Nantucket Sound, the relatively short distance from port to the survey site, the limited number of vessels, and the small vessel size. Large whales are considered rare in Nantucket Sound and small marine mammals (e.g., harbor porpoise and seals) move quickly through the water column and will likely avoid the vessels. CWA did not request take from a ship strike and NMFS is not authorizing take from a ship strike.

Comment 14: The Alliance requested that NMFS specify the port or ports that survey vessels will transit to and from, which could determine the number and species of marine mammals encountered.

Response: CWA expects that survey vessels will transit to and from ports within Nantucket Sound, most likely out of Falmouth Harbor, Massachusetts. This port location was considered in the Biological Opinion for the long-term Cape Wind energy project.

Comment 15: The Alliance believes that CWA's survey activities are likely to result in the take of right whales. Specifically, they noted the risk of ship strike, the likelihood of harassing right whales by causing them to avoid vessel traffic, and the possibility of displacing right whales from areas with elevated underwater sound levels.

Response: In 2008, NMFS published a final rule in the Federal Register instituting Mid-Atlantic Seasonal Management Areas with a mandatory 10-knot speed restriction to reduce the threat of ship collisions with right whales. The Seasonal Management Areas were established to provide additional protection for right whales and the timing, duration, and geographic extent of the speed restrictions were specifically designed to reflect right whale movement, distribution, and aggregation patterns. Nantucket Sound is not considered a Seasonal Management Area or a

Dynamic Management Area (with a voluntary 10-knot speed zone). Furthermore, survey vessels will not enter a Seasonal Management Area or a Dynamic Management Area while transiting to and from port. The presence of right whales in Nantucket Sound is considered rare and sporadic and NMFS believes that the possibility of a survey vessel striking a right whale is unlikely.

The very qualities that make right whales susceptible to being struck by vessels in certain areas also make them highly detectable. NMFS believes that the size of right whales, their slow movements, and the amount of time they spend at the surface would make them extremely likely to be spotted by PSOs before they are exposed to sounds that constitute harassment. Whenever survey activities are underway, at least one PSO will be monitoring the 500-m exclusion zone – which is larger than both the Level A (30 m) and Level B (444 m) harassment isopleths – and will call for a shutdown if any marine mammal is observed within or moving toward the exclusion zone. Furthermore, right whales are not common in Nantucket Sound and have not been observed on Horseshoe Shoal, likely due to the shallower water depths. However, as stated in the Biological Opinion for the long-term Cape Wind energy project, CWA will monitor the Right Whale Sighting Advisory System and can modify their survey schedule in the unlikely event that whales are present within Nantucket Sound.

Because right whales are uncommon in Nantucket Sound, CWA's survey activities are not expected to result in displacement. Furthermore, there are no known foraging grounds or other important habitats for right whales in Nantucket Sound.

Comment 16: The Alliance takes issue with the proposed IHA's statement that there is no information on species-specific TTS for harbor porpoises. The Alliance points out that data published by Lucke et al. (2009) and Kastelein et al. (2011) suggests that TTS onset occurs at lower received energy levels than has been found in other odontocetes. The Alliance believes

that existing impact criteria for cetaceans based on other species may underestimate effects on harbor porpoises.

Response: As explained in the proposed IHA notice (76 FR 56735), TTS is the mildest form of hearing impairment that can occur during exposure to a strong sound (Kryter, 1985). While experiencing TTS, the hearing threshold rises, and a sound must be stronger in order to be heard. At least in terrestrial mammals, TTS can last from minutes or hours to (in cases of strong TTS) days, can be limited to a particular frequency range, and can occur to varying degrees (i.e., a loss of a certain number of dBs of sensitivity). For sound exposures at or somewhat above the TTS threshold, hearing sensitivity in both terrestrial and marine mammals recovers rapidly after exposure to the noise ends.

Marine mammal hearing plays a critical role in communication with conspecifics and in interpretation of environmental cues for purposes such as predator avoidance and prey capture. Depending on the degree (elevation of threshold in dB), duration (i.e., recovery time), and frequency range of TTS and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious. For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during a time when communication is critical for successful mother/calf interactions could have more serious impacts if it were in the same frequency band as the necessary vocalizations and of a severity that it impeded communication. The fact that animals exposed to levels and durations of sound that would be expected to result in this physiological response would also be expected to have behavioral

responses of a comparatively more severe or sustained nature is also notable and potentially of more importance than the simple existence of a TTS.

TTS is considered by NMFS to be just one type of Level B (non-injurious) harassment. NMFS is aware that some studies suggest that harbor porpoises may be more sensitive to sound than other odontocetes and should have included those references (Lucke et al., 2009 and Kastelein et al., 2011) in the previous Federal Register notice. NMFS agrees that TTS onset may occur in harbor porpoises at lower received levels (when compared to other odontocetes). However, NMFS' 160-dB threshold criteria are based on the onset of behavioral harassment, not the onset of TTS. NMFS does not currently have criteria specific to TTS. Rather, the potential for TTS is considered within NMFS' analysis of potential impacts from Level B harassment.

Comment 17: The Alliance noted that if the source level of the chosen boomer exceeds 205 dB, the analysis in the application underestimates effects and take levels.

Response: As explained in the proposed IHA, CWA will use sound sources comparable to what was included in their application. CWA is aware of NMFS' acoustic threshold requirements and does not plan to use a boomer with a source level greater than 205 dB.

Comment 18: The Alliance stated that the proposed IHA specifies a shutdown radius based on a 160-dB criterion, rather than the standard 180-dB criterion and requests that the 180-dB criterion be adopted.

Response: The shutdown radius is based on CWA's 500-m exclusion zone, not a 160-dB criterion. The 500-m exclusion zone was established by BOEMRE in CWA's lease requirements and is actually more conservative (i.e., larger) than the estimated Level B (444 m) or Level A (30 m) harassment isopleths. Typically, NMFS would require an applicant to shutdown at the Level A harassment isopleth.

Comment 19: The Alliance claimed that the procedure used in CWA's application to estimate the number of potential exposures provides insufficient consideration to the effects of multiple takes on the same animal, based on the close spacing of survey lines.

Response: For purposes of the MMPA, NMFS considers take of an individual marine mammal to occur once per event within a 24-hour period. After 24 hours, the clock is essentially reset and a second take is possible if an animal is exposed to another event that constitutes harassment. While an animal may experience multiple exposures from an event within a 24-hour window, NMFS only accounts for a single take within a 24-hour window. CWA's take estimates were calculated based on the area ensonified by sound at 160 dB or higher each day. Therefore, they sufficiently accounted for the entire area of exposure within a single day.

Comment 20: The Alliance noted that CWA's application does not state whether the density data used for cetaceans was derived with the inclusion of correction factors allowing for marine mammals to be missed during surveys due to (1) animals being below the surface (availability bias); or (2) animals being at the surface, but not seen (detection bias). Similarly for seals, the Alliance suggested that the procedures described in CWA's application are correct for availability bias, but not for detection bias.

Response: CWA did not apply a correction factor to the sightings data from Pittman et al. (2006) for cetaceans discussed in the application. However, as discussed in the application, CWA used the higher sightings values to be conservative when estimating cetacean density. The sightings data illustrate a gradient in cetacean density with higher densities in waters outside of Nantucket Sound. The higher sightings values are considered conservative for the activity area because they are associated with deeper, more seaward areas.

Comment 21: The Alliance noted that while Figure 2 of CWA's application appears to show more than 17 seal sightings within the proposed project area in 2002 alone, the application states that only 17 seal observations were made during three years of aerial surveys.

Response: Figure 2 of CWA's application depicts binned ranges of seal observations in and around Nantucket Sound. However, CWA highlighted the anticipated area of ensonification to illustrate the number of seal observations within the survey area. Within that anticipated area of ensonification, there are only one to four observations of seals during 2002. NMFS believes that Figure 2 accurately depicts the range of seal observations over a 3-year period and this information was correctly stated in CWA's application.

Comment 22: The Alliance raised concerns regarding the minke whale population estimates used in CWA's application and the proposed IHA. More specifically, the Alliance noted that the application quotes a population estimate for an area that does not include the study area, whereas the proposed IHA quotes a larger population estimate for a larger area that does include the study area. The Alliance believes that the population estimates are relevant because of NMFS' need to anticipate take as a percentage of the population size.

Response: Minke whales off the eastern coast of the U.S. are considered to be part of the Canadian East Coast stock, which inhabits the area from the western half of the Davis Strait to the Gulf of Mexico. Both the application and the proposed IHA use the best recent abundance estimate for the Canadian East Coast population; however, CWA quoted only the U.S. survey, whereas NMFS quoted the sum of the U.S. and Canadian surveys. Data used to create the abundance estimate for this stock was gathered from surveys in the Gulf of Maine and northward. While surveys did not specifically cover Nantucket Sound, the NMFS 2010 stock

assessment report is still considered the best available information for this population of minke whales.

CWA miscalculated their percentage of the minke whale population using an incorrect take estimate. However, CWA also used the smaller, U.S. survey population size when estimating take as a percentage of the population size. This actually results in a larger percentage. Therefore, CWA requested take authorization for an even smaller portion of the overall Canadian East Coast stock of minke whales than was noted in the proposed IHA. Whether the U.S. survey population size or the sum of the U.S. and Canadian surveys is used, the estimated take of minke whales is less than one percent of the stock.

Comment 23: The Alliance referred to CWA's application, which indicates that the anticipated impacts to marine mammals would be temporary behavioral changes due to avoidance. Given that the survey would continue for approximately 137 days, the Alliance believes that CWA's application understates the potential impacts to marine mammals because the application should have addressed the possibility that some animals would be excluded from habitat for an extended period of time.

Response: While CWA's survey activities may last for a total of 137 days, they will only occur during daylight hours and will encompass a relatively small radius (maximum 444 m). Furthermore, marine mammal densities in Nantucket Sound are low and the area is not known to be a primary foraging ground. Therefore, any marine mammals who avoid the survey area due to elevated sound levels will likely not be excluded from vital habitat.

Comment 24: The Alliance requested clarity on the minimum number of NMFS-approved protected species observers that will be on the survey vessel.

Response: As explained in the Monitoring section on this notice, CWA will have at least one PSO to monitor the 500-m exclusion zone (an area that is larger than the Level B harassment zone) on the survey vessel at all times. Due to the survey vessel's small size and limited space for up to six personnel, it is not feasible for CWA to guarantee that more than one PSO will be available for mitigation monitoring. In addition to captain and crew members, a project archaeologist and CWA's environmental engineer will be present during survey activities. However, CWA will also provide additional monitoring efforts to increase knowledge of marine mammal species in Nantucket Sound. At least one NMFS-approved PSO will conduct behavioral monitoring from the survey vessel at least twice a week to estimate take and evaluate the behavioral impacts that survey activities have on marine mammals outside of the 500-m exclusion zone. In addition, CWA will send out a separate vessel with a NMFS-approved PSO to collect data on species presence and behavior before surveys begin and once a month during survey activities.

Comment 25: The Alliance took issue with NMFS' assumption that marine mammals would be detected before entering the 180-dB isopleth. The Alliance believes that marine mammals may enter the 180-dB isopleth without being detected and therefore, may incur auditory impairment.

Response: The 180-dB Level A harassment isopleth is estimated to occur 30 m from the survey vessel. NMFS believes that marine mammals are highly likely to be detected within 30 m of the vessel, especially since a PSO(s) will be responsible for monitoring a 500-m exclusion zone around the vessel. The 500-m exclusion zone creates a large buffer around the 180-dB isopleth where the potential for injury occurs. NMFS believes that the mitigation and monitoring

measures in place are sufficient to prevent marine mammals from being exposed to sounds at 180 dB or higher. NMFS further addressed this issue in the response to Comment 8.

Comment 26: The Alliance notes that CWA's application proposes to submit a 90-day report, but the proposed IHA requires a 120-day report.

Response: The BOEMRE lease requires CWA to submit a report to BOEMRE and NMFS within 90 days of completion of survey activities. NMFS sometimes gives applicants up to 120 days to submit a report, so this language incidentally carried over into the proposed IHA. CWA will submit their report within 90 days of completion due to the lease requirement, and the 90-day time period is included in the final IHA. However, the report is due after the activity, so the amount of time specified simply determines how long the applicant has to organize their monitoring results and prepare a document for NMFS. The deadline does not change the activity's impacts on marine mammals.

Comment 27: HSUS raised concern that impacts from the survey are not confined to the project footprint because sound levels from the boomer would not fall below 160 dB for approximately 1/4 of a mile from the vessel and could be heard for many miles beyond that distance.

Response: NMFS analyzed acoustic impacts to marine mammals out to the 160-dB isopleth, which is considered our threshold for marine mammal harassment. Received levels below 160 dB (for the sound sources being used by CWA) are not considered to harass marine mammals and are, therefore, not considered to result in take under the MMPA.

Comment 28: HSUS disagreed that three species of cetaceans (minke whale, harbor porpoise, and Atlantic white-sided dolphin) are likely to be taken incidental to survey activities and, along with WTGH(A), requested that the North Atlantic right whale be considered. HSUS

also believes that the 2010 and 2011 right whale sightings in Nantucket Sound should be part of an ESA consultation.

Response: NMFS addressed the potential for right whale harassment in the response to Comment 15. The right whale sightings in Nantucket Sound from 2010 were addressed in NMFS' Biological Opinion on the long-term Cape Wind energy project. Right whale sightings in Nantucket Sound are still considered rare and the area is not a known foraging, breeding, or calving ground for right whales.

Comment 29: WTGH(A) requested that NMFS begin "government-to-government consultation on CWA's request for an IHA under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA)."

Response: NMFS conducted an independent environmental analysis in the form of an EA to comply with NEPA. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect of their undertakings on historic properties, and requires agency officials to consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking. Executive Order 13175 requires that federal agencies conduct government-to-government consultation with Indian tribes prior to issuing regulations that have tribal implications. The Executive Order also outlines principles that should be followed by agencies when formulating policies with tribal implications. Regulations and policies with "tribal implications" include those that have substantial direct effects on one or more Indian tribes, on the relationship between the federal government and Indian tribes, or on the distribution of power and responsibilities between the federal government and Indian tribes.

NMFS recognizes the importance of Nantucket Sound to WTGH(A) as a Traditional Cultural Property, and that CWA's long-term energy project was the subject of a consultation undertaken by BOEMRE under section 106 of the NHPA. However, NMFS' undertaking here is narrowly limited to issuance of an IHA under the MMPA. NMFS has determined that issuance of an incidental take authorization for the harassment of marine mammals is a type of undertaking that does not have the potential to cause effects to historic properties. The authorized Level B harassment will have only a negligible impact on affected marine mammal species or stocks. Therefore, consultation under NHPA is not required (36 C.F.R. § 800.3(a)(1); see Save Our Heritage, Inc. v. FAA, 269 F.3d 49 (1st Cir. 2001) (consultation under NHPA not required where federal agency had found that effects of undertaking on environment and historic properties would be de minimus)). Similarly, issuance of the IHA to CWA does not constitute a regulation or policy with tribal implications. Issuance of the IHA will not have substantial direct effects upon the tribe, and government-to-government consultation is therefore not required on this action.

Comment 30: WTGH(A) and the Gloucester Fishermen's Wives Association et al. requested that NOAA ask the Department of Interior (DOI) to defer further action on offshore wind leasing until Coastal and Marine Spatial Planning (CMSP) is in place. Furthermore, WTGH(A) requested that NOAA ask DOI to require EISs, rather than EAs, for lease issuance.

Response: NOAA supports the development of a CMSP framework to inform future decisions. However, the MMPA mandates that the incidental taking of marine mammals be authorized if certain findings can be made. NMFS must proceed with incidental take authorizations so long as the requirements set forth in sections 101(a)(5)(A) and (D) of the MMPA are met. With regards to EISs versus EAs, DOI's Bureau of Ocean Energy

Management, Regulation, and Enforcement (BOEMRE) published the Cape Wind Final Environmental Impact Statement (EIS) on January 21, 2009 (74 FR 3635).

Comment 31: WTGH(A) and the Gloucester Fishermen's Wives Association et al. requested that NMFS deny CWA's IHA application until LOA regulations are in place and a full EIS has been prepared.

Response: As explained in the responses to Comments 10 and 11, issuance of regulations and an associated LOA are not required for this activity. BOEMRE published an EIS for the Cape Wind long-term energy project on January 21, 2009 (74 FR 3635) and NMFS will publish an EA concurrently with this notice.

Comment 32: OPTI claimed that NMFS has done nothing to comply with ESA as it relates to the MMPA authorizations.

Response: NMFS' Northeast Regional Office completed a Biological Opinion on December 30, 2010, which analyzed the effects of the long-term Cape Wind energy project and concluded that the project is not likely to adversely affect right, humpback, or fin whales and, therefore, is not likely to jeopardize the continued existence of these species. CWA did not propose, nor is NMFS authorizing, the take of any ESA-listed marine mammals. Therefore, further consultation is not required.

Comment 33: One individual commented on the lack of adequate data on marine mammals and believes that the issuance of an IHA is too risky.

Response: The MMPA mandates that the incidental taking of marine mammals be authorized if certain findings can be made. NMFS must proceed with incidental take authorizations so long as the requirements set forth in sections 101(a)(5)(A) and (D) of the

MMPA are met. NMFS used the best-available science to inform our final determination and believes that the information is adequate to support our findings.

Comment 34: Numerous individuals commented on their general opposition towards killing marine mammals.

Response: CWA did not propose, nor is NMFS authorizing, the take of marine mammals by serious injury or mortality. The IHA authorizes Level B harassment of marine mammals, incidental to the high resolution geophysical survey.

Description of Marine Mammals in the Area of the Specified Activity

Marine mammals with known occurrences in Nantucket Sound that could be harassed by high resolution geophysical survey activity in Nantucket Sound are listed in Table 1. These are the species for which take is being authorized. In general, large whales do not frequent Nantucket Sound, but they are discussed below because some species have been reported near the project vicinity. While other marine mammal species are present in the New England region (e.g., humpback, fin, and right whales), they are considered rare in Nantucket Sound; this is likely due to the shallow depths of Nantucket Sound and its location outside of the coastal migratory corridor. NFMS has presented a more detailed discussion of the status of these stocks and their occurrence in Nantucket Sound in the notice of the proposed IHA (76 FR 56735, September 14, 2011).

Table 1. Marine mammals that could be impacted by survey activities in Nantucket Sound.

Common Name	Scientific Name	MMPA Status ¹	Time of Year in New England
Whales and Dolphins (Cetaceans)			
Minke whale	<i>Balaenoptera actuorostrata</i>	N-D	April through October
Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>	N-D	October through December
Harbor porpoise	<i>Phocoena phocoena</i>	N-D	Year-round (peak

			Sept-Apr)
Seals (Pinnipeds)			
Gray seal	<i>Halichoerus grypis</i>	N-D	Year-round
Harbor seal	<i>Phoca vitulina</i>	N-D	October through April

¹N-D = non-depleted. None of the species are listed under the Endangered Species Act.

Potential Effects on Marine Mammals

Acoustic stimuli generated by the operation of the shallow-penetration and medium-penetration subbottom profilers, which introduce sound into the marine environment, have the potential to cause Level B behavioral harassment of marine mammals in the survey area. The effects of sounds from this type of survey equipment might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, temporary or permanent impairment, or non-auditory physical or physiological effects (Richardson et al., 1995; Gordon et al., 2004; Nowacek et al., 2007; Southall et al., 2007). Permanent hearing impairment, in the unlikely event that it occurred, would constitute injury, but temporary threshold shift (TTS) is not an injury (Southall et al., 2007). Although the possibility cannot be entirely excluded, it is unlikely that the project would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects. Based on the available data and studies described here and in the proposed IHA notice, some behavioral disturbance is expected, but NMFS expects the disturbance to be localized and short-term.

The notice of the proposed IHA (76 FR 56735, September 14, 2011) included a discussion of the effects of sounds from subbottom profilers on cetaceans and pinnipeds. NMFS refers the reader to CWA's application and NMFS' EA for additional information on the behavioral reactions (or lack thereof) by all types of marine mammals to geophysical surveys.

Anticipated Effects on Marine Mammal Habitat

NMFS included a detailed discussion of the potential effects of this action on marine mammal habitat, including physiological and behavioral effects on marine fish and invertebrates in the notice of the proposed IHA (76 FR 56735, September 14, 2011). While NMFS anticipates that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, this impact to habitat is temporary and reversible, which NMFS considered in further detail in the notice of the proposed IHA (76 FR 56735, September 14, 2011) as behavioral modification. The main impact associated with the activity would be temporarily elevated noise levels and the associated direct effects on marine mammals.

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must, where applicable, set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for subsistence uses where relevant.

To reduce the potential for disturbance from acoustic stimuli associated with the specified activity, CWA will implement the following mitigation measures for marine mammals:

Establishment of an Exclusion Zone

During all survey activities involving the shallow-penetration and medium-penetration subbottom profilers, CWA will maintain a 500-m radius exclusion zone around each survey vessel. This area will be monitored for marine mammals 60 minutes (as stipulated by the BOEMRE lease) prior to starting or restarting surveys, during surveys, and 60 minutes after survey equipment has been turned off. Typically, the exclusion zone is based on the area in which marine mammals could be exposed to injurious (Level A) levels of sound. CWA's lease

requirements specify a 500-m exclusion zone, which exceeds both the Level A (30 m) and Level B (444 m) isopleths for marine mammal harassment. Therefore, CWA's exclusion zone is extremely conservative and minimizes potential impacts to marine mammals from increased sound exposures.

Shut Down and Delay Procedures

If a PSO sees a marine mammal within or approaching the exclusion zone prior to the start of surveying, the observer will notify the appropriate individual who will then be required to delay surveying or shut down survey equipment until the marine mammal moves outside of the exclusion zone or if the animal has not been resighted for 60 minutes.

Soft-start Procedures

A "soft-start" technique would be used at the beginning of survey activities each day (or following a shut down) to allow any marine mammal that may be in the immediate area to leave before the sound sources reach full energy.

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation, including consideration of personnel safety, and practicality of implementation.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS or recommended by the public, NMFS has determined that the mitigation measures provide the means of effecting the least practicable adverse impacts on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the action area.

Visual Monitoring

CWA will designate at least one biologically trained, on-site individual, approved in advance by NMFS, to implement the proposed mitigation measures that require real-time monitoring. The PSO(s) will monitor for marine mammals 60 minutes before, during, and 60 minutes after all survey activities and call for delay or shutdown if any marine mammal is observed approaching or within the 500-m exclusion zone.

CWA will also provide additional monitoring efforts to increase knowledge of marine mammal species in Nantucket Sound. At least one NMFS-approved PSO will conduct behavioral monitoring from the survey vessel at least twice a week to estimate take and evaluate the behavioral impacts that survey activities have on marine mammals outside of the 500-m

exclusion zone. In addition, CWA will send out a separate vessel with a NMFS-approved PSO to collect data on species presence and behavior before surveys begin and once a month during survey activities.

PSOs will be provided with the equipment necessary to effectively monitor for marine mammals (e.g., high-quality binoculars, compass, and range-finder) in order to determine if animals have entered into the harassment isopleths and to record species, behaviors, and responses to survey activity. PSOs must be able to effectively monitor the 500-m exclusion zone whenever the subbottom profilers are in use. Survey efforts will only take place during daylight hours and PSOs' visibility must not be obscured by fog, lighting conditions, etc.

Hydroacoustic Monitoring

In addition to visual monitoring, CWA will conduct hydroacoustic monitoring at the beginning of survey activities to verify the estimated Level A (180) and Level B (160) harassment isopleths.

Reporting

CWA will submit a report to NMFS within 90 days of expiration of the IHA or completion of surveying, whichever comes first. The report will provide full documentation of methods, results, and interpretation pertaining to all monitoring. More specifically, the report will include data from marine mammal sightings (e.g., species, group size, behavior), any observed reactions to survey activities, distances between marine mammals and the vessel, and sound sources operating at time of sighting.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA, such as an injury (Level A harassment), serious injury, or mortality (e.g., ship-strike, gear interaction, and/or entanglement), CWA shall

immediately cease the specified activities and report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Michael.Payne@noaa.gov and ITP.Magliocca@noaa.gov and the Northeast Regional Stranding Coordinator at 978-281-9300 (Mendy.Garron@noaa.gov). The report must include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved;
- Vessel's speed during and leading up to the incident;
- Description of the incident;
- Status of all sound source use in the 24 hours preceding the incident;
- Water depth;
- Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities will not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with CWA to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. CWA may not resume their activities until notified by NMFS via letter, email, or telephone.

In the event that CWA discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e.,

in less than a moderate state of decomposition as described in the next paragraph), CWA will immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Michael.Payne@noaa.gov and ITP.Magliocca@noaa.gov and the Northeast Regional Stranding Coordinator at 978-281-9300 (Mendy.Garron@noaa.gov). The report must include the same information identified in the paragraph above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with CWA to determine whether modifications in the activities are appropriate.

In the event that CWA discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), CWA will report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401 and/or by email to Michael.Payne@noaa.gov and ITP.Magliocca@noaa.gov and the Northeast Regional Stranding Coordinator at 978-281-9300 (Mendy.Garron@noaa.gov), within 24 hours of the discovery. CWA will provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, the MMPA defines "harassment" as:

any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Only take by Level B harassment is anticipated to be authorized as a result of the specified activity. Acoustic stimuli (i.e., increased underwater sound) generated during the operation of the subbottom profilers may have the potential to cause marine mammals in the survey area to be exposed to sounds at or greater than 160 dB or cause temporary, short-term changes in behavior. Take by injury, serious injury, or mortality is neither anticipated nor authorized. NMFS has determined that the required mitigation and monitoring measures will minimize any potential risk for injury or mortality.

A detailed discussion of the methods used to calculate marine mammal densities and take estimates in the survey area was included in the application and the notice for the proposed IHA (76 FR 56735, September 14, 2011). In summary, sightings per unit effort (SPUE) data were used to estimate species density within the survey area and take estimates were calculated by multiplying the density values (n) measured in individuals per square kilometers, by the area of the zone of influence in square kilometers, times the total number of survey days ($d = 137$). The zone of influence was calculated as a function of the distance a survey vessel with deployed boomer would travel in one survey day and the area around the boomer where sound levels reach or exceed 160 dB.

To be conservative, CWA requested incidental take based on the highest estimated possible species exposures to potentially disturbing levels of sound from the boomer. No marine mammals are expected to be exposed to injurious levels of sound in excess of 180 dB during survey activities. NMFS is authorizing the Level B harassment of 11 minke whales, 231 Atlantic white-sided dolphins, 138 harbor porpoises, 398 gray seals, and 99 harbor seals. These numbers are extremely conservative because the highest density estimates were used and mitigation

measures (such as the 500-m exclusion zone, marine mammal monitoring, and ramp up procedures) were not considered during calculations. More specifically, CWA's 500-m exclusion zone means that they will be shutting down before an animal ever enters the Level B harassment isopleth (444 m), so take numbers should be notably less. The authorized take numbers indicate the maximum number of animals expected to occur within the largest Level B harassment isopleth (444 m) and take into account the possibility that an animal may not be seen before it enters the 500-m exclusion zone. Estimated and proposed level of take of each species is less than one percent of each affected stock and therefore is considered small in relation to the stock estimates previously set forth.

Negligible Impact and Small Numbers Analysis and Determination

NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival." In making a negligible impact determination, NMFS considers a number of factors which include, but are not limited to, number of anticipated injuries or mortalities (none of which would be authorized here), number, nature, intensity, and duration of Level B harassment, and the context in which takes occur (for instance, will the takes occur in an area or time of significance for marine mammals, or are takes occurring to a small, localized population?).

As described above, marine mammals will not be exposed to activities or sound levels which will result in injury (for instance, PTS), serious injury, or mortality. Anticipated impacts of survey activities on marine mammals are temporary behavioral changes due to avoidance of the area. All marine mammals in the vicinity of survey operations will be transient as no known breeding, calving, pupping, nursing, or haul-outs overlap with the survey area. The closest

pinniped haul-outs are 23.5 km (12.7 NM) and 13.7 km (7.4 NM) away on Monomoy Island and Muskeget Island, respectively. Marine mammals approaching the survey area will likely be traveling or opportunistically foraging. The amount of take authorized is considered small (less than one percent) relative to the estimated populations of 8,987 minke whales, 63,368 Atlantic white-sided dolphins, 89,504 harbor porpoises, 250,000 gray seals, and 99,340 harbor seals. No affected marine mammals are listed under the ESA or considered strategic under the MMPA. Marine mammals are expected to avoid the survey area, thereby reducing exposure and impacts. No disruption to reproductive behavior is anticipated and there is no anticipated effect on annual rates of recruitment or survival of affected marine mammals.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS determines that CWA's survey activities will result in the incidental take of small numbers of marine mammals, by Level B harassment, and that the total taking will have a negligible impact on the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action.

Endangered Species Act (ESA)

No marine mammal species listed under the ESA are anticipated to occur within the action area. Therefore, section 7 consultation under the ESA is not required.

National Environmental Policy Act (NEPA)

In compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), as implemented by the regulations published by the Council on Environmental Quality (40 CFR parts 1500-1508), and NOAA Administrative Order 216-6, NMFS prepared an

Environmental Assessment (EA) to consider the direct, indirect, and cumulative effects to marine mammals and other applicable environmental resources resulting from issuance of a 1-year IHA to CWA for the take of marine mammals incidental to a high resolution geophysical survey in Nantucket Sound, Massachusetts. The EA will be made available on the NMFS website listed in the beginning of this document concurrently with this notice.

Dated: December 20, 2011.

James H. Lecky,
Director, Office of Protected Resources,
National Marine Fisheries Service.

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